

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau(43) International Publication Date  
21 October 2004 (21.10.2004)

PCT

(10) International Publication Number  
WO 2004/089963 A1(51) International Patent Classification<sup>7</sup>: C07F 19/00,  
17/02, C07D 403/02, A61K 33/24(21) International Application Number:  
PCT/US2004/010280

(22) International Filing Date: 2 April 2004 (02.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/460,551 4 April 2003 (04.04.2003) US(71) Applicant (for all designated States except US): SAN  
DIEGO STATE UNIVERSITY FOUNDATION  
[US/US]; 5250 Campanile Drive, San Diego, CA  
92182-1998 (US).

(72) Inventors; and

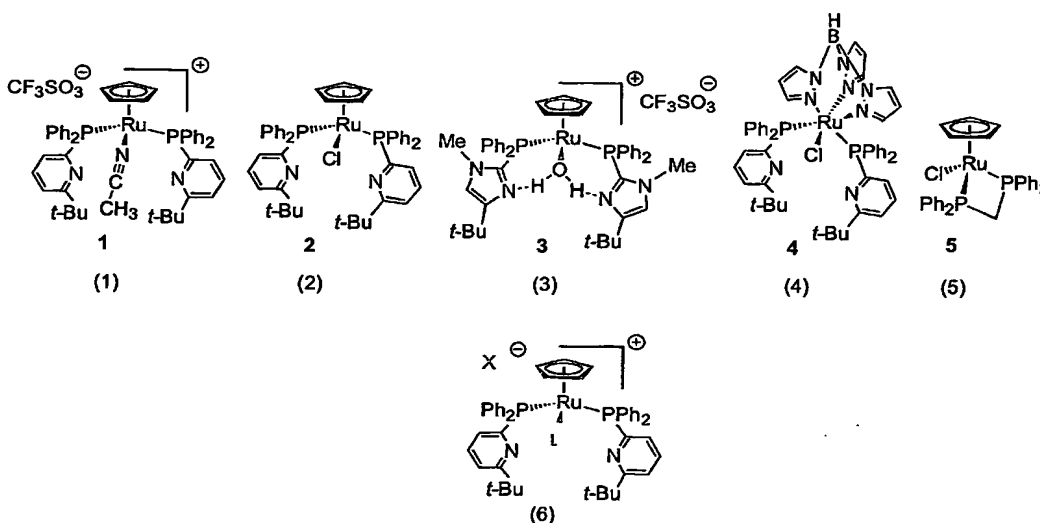
(75) Inventors/Applicants (for US only): GROTHJAHN, Dou-  
glas, Bryan [US/US]; 4615 55th Street, San Diego, CA  
92101 (US). LEV, Daniel, A. [US/US]; 1910 State Street  
#112, San Diego, CA 92101 (US).(74) Agent: UXA, Frank, J.; Stout, Uxa, Buyan & Mullins,  
LLP, 4 Venture, Suite 300, Irvine, CA 92618 (US).(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,  
GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: COMPOSITIONS AND METHODS FOR FACILITATING REACTION AT ROOM TEMPERATURE



(57) Abstract: Compositions and methods useful in facilitating or conducting a reaction at effective conditions, such as room temperature (e.g. about 70 degrees F), utilize a compound including at least two different heteroatoms, and optionally a heterocycle, and a transition metal. The compound is effective in facilitating a variety of reactions including hydrolysis reactions, alcoholysis reactions, aminolysis reactions, carbon dioxide conversion reactions, hydroamination reactions, hydration reactions, and the like.